Atterney's Docket No. 6491.P059

PATENT

Not Yet Assigned

2631

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner:

Art Unit:

In He	Patent Application of:
	Hossein Sedarat
Applic	ation No.: 10/789,552
Filed:	February 26, 2004
For:	BIT-LOADING IN MULTICARRIER COMMUNICATION SYSTEMS IN THE PRESENCE OF AN ASYMMETRIC, CORRELATED

GAUSSIAN NOISE SOURCES

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 together with copies of the documents cited on that form, except for copies not required to be submitted (e.g., copies of U.S. patents and U.S. published patent applications need not be enclosed). It is respectfully requested that the cited documents be considered and that the enclosed copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

Pursuant to 37 C.F.R. § 1.97, the submission of this Information Disclosure Statement is not to be construed as a representation that a search

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Application No.: 10/789,552 -1- Docket No.: 6491.P059

has been made and is not to be construed as an admission that the information cited in this statement is material to patentability.

Pursuant to 37 C.F.R. § 1.97, this Information Disclosure Statement is being submitted under one of the following (as indicated by an "X" to the left of the appropriate paragraph):

X	37 C.F.R. §1.97(b).
	37 C.F.R. §1.97(c). If so, then enclosed with this Information Disclosure Statement is one of the following:
	A statement pursuant to 37 C.F.R. §1.97(e) or
	A check for \$180.00 for the fee under 37 C.F.R. § 1.17(p).
	37 C.F.R. §1.97(d). If so, then enclosed with this Information Disclosure Statement are the following:

- (1) A statement pursuant to 37 C.F.R. §1.97(e); and
- (2) A check for \$180.00 for the fee under 37 C.F.R. §1.17(p) for submission of the Information Disclosure Statement.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Thomas S. Ferrill Reg. No. 42,532

12400 Wilshire Blvd. Seventh Floor Los Angeles, CA 90025 (408) 720-8300

FEE TRANSMITTAL FOR FY 2005 (FY 2005 Begins 10/01/2004. Fee changes made on 11/22/04 and 12/08/04 are included.) TOTAL AMOUNT OF PAYMENT (\$) 0 omplete if Known: Application No. 10/789,552 **Filing Date** February 26, 2004 **First Named Inventor** Hossein Sedarat **Examiner Name** Not Yet Assigned 2<u>631</u> Art Unit Attorney Docket No. 6491.P059 Applicant claims small entity status. See 37 CFR 1.27. **METHOD OF PAYMENT** (check all that apply) Check **Credit Card** Other Money Order **Deposit Account** Deposit Account Number: 02-2666 Deposit Account Name: The Director is Authorized to do the following with respect to the above-identified Deposit Account: Charge fee(s) indicated below. Credit any overpayments. Charge any additional fees during the pendency of this application. Any concurrent or future reply that requires a petition for extension of time should be treated as incorporating an appropriate petition for extension of time and all required fees should be charged. Charge fee(s) indicated below except for the filing fee **FEE CALCULATION** 1A. BASIC FILING FEE/SEARCH FEE/EXAMINATION FEE Large Entity **Small Entity** Fee Fee Fee Fee Code Code **Fee Description** Fee Paid (\$) (\$) 1011 Utility application filing fee 300 2011 150 \$300.00 1111 500 Utility search fee 1,000/500* 2111 250 <u>\$500.00</u> 1311 200 100 Utility examination fee 2311 \$200.00 1012 200 2012 100 Design application filing fee 1112 100 2112 50 Design search fee 430/215* 1312 130 2312 65 Design examination fee 1013 200 2013 100 Plant filing fee 1113 300 2113 150 Plant search fee 660/330* 1313 160 2313 80 Plant examination fee 1004 300

SUBTOTAL (1) \$ 0 * List the filing, search, and examination fees separately, but pay concurrently.

Provisional application filing fee

1.400/700*

Reissue filing fee

Reissue search fee

Reissue examination fee

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1B.	APPL	ICATION	N SIZE I	<u>EE</u>		
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1202	50	2202	25	Claims in excess of 20		
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1203	360	2203	180	Multiple dependent claim, if not paid		
1204	200	2204	100	**Reissue independent claims over original		
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FEE CALCULATION (continued)

3. ADDITIONAL FEES

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1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1813	8,800	1813	8,800	Request for inter parties reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510 705	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	
1403	1,000	2403	500	Request for oral hearing	
1451 1452	1,510 500	1451 2452	1,510 250	Petition to institute a public use proceeding Petition to revive – unavoidable	
				Petition to revive - unavoidable Petition to revive - unintentional	
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1502 1503	1100	2502 2503	550	Plant issue fee	
1464	130	1460	130	Petitions to the Commissioner (CFR 1.17(h) Group III)	
1463	200	1460	200	Petitions to the Commissioner (CFR 1.17(II) Group II)	
1462	400	1460	400	Petitions to the Commissioner (CFR 1.17(g) Group I)	
1807	400 50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	0
8021	40	8021	40	Recording each patent assignment per	
0021	70	0021	70	property (times number of properties)	
1809	790	2809	395	For filing a submission after final rejection	
.005	, 55	2000	555	(see 37 CFR 1.129(a))	
1814	130	2814	65	Statutory Disclaimer	
1810	790	2810	395	For each additional invention to be examined	
		20.0		(see 37 CFR 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design	
				application	
1504	300	1504	300	Publication fee for early, voluntary, or normal pub.	
1505	300	1505	300	Publication fee for republication	
1803	130	1803	130	Request for voluntary publication or republication	
1808	130	1808	130	Processing fee under 37 CFR 1.17(i) (except provisionals)	
1454	1,370	1454	1,370	Acceptance of unintentionally delayed claim for priority	'
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Substitute	for Form 144	9/PTO			Complete	if Known
	INFO	2ΝΛΔ	TION DISCLOSU	IDE	Application Number	10/789,552
BE					Filing Date	February 26, 2004
61 c	TAT	EME	ENT BY APPLICA	NT	First Named Inventor:	Hossein Sedarat
	<i>'''</i>	(use a	s many sheets as necessary)		Art Unit	2631
MAR 0 4 2	1905				Examiner Name	Not Yet Assigned
Sheet	I July		of	4	Attorney Docket Number	6491.P059
TA TRAD	W.		U.S. PAT	ENT DOCUMENTS	8	
Examiner Initials*	Cite No. ¹	Num	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	5,285,474	02/08/1994	Chow et al.	
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			FORI	EIGN PATEN	T DOCUMENTS		
Examiner Initials*	Cite No. ¹	Foreign Patent Docu Country Code ³ Number ⁴ Ki	-	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documer	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

Examiner	Date Considered	
Signature		

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450**.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Complete if Known Substitute for Form 1449/PTO **Application Number** 10/789,552 INFORMATION DISCLOSURE February 26, 2004 Filing Date STATEMENT BY APPLICANT First Named Inventor: Hossein Sedarat (use as many sheets as necessary) Art Unit 2631 **Examiner Name** Not Yet Assigned **Attorney Docket Number** 006491.P059 **Sheet** 2 of NON PATENT LITERATURE DOCUMENTS T^2 Cite Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the Examiner No¹ Initials* item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published FRANKLIN, CURT, "How DSL Works," How Stuff Works, http://computer.howstuffworks.com/dsl.htm/printable, printed November 16, 2004. SEDARAT, HOSSEIN, et al., "Impulse Noise Protection for Multi-Carrier Communication Systems", Submitted to IEEE ICASSP (2005). SEDARAT, HOSSEIN, et al., "Multicarrier Bit-Loading in Presence of Biased Gaussian Noise Sources", IEEE Consumer Communication and Networking Conference, January 2005. BACCARELLI, ENZO, et al., "Novel Efficient Bit-Loading Algorithms for Peak-Energy-Limited ADSL-Type Multicarrier Systems, IEEE Trans on Signal Processing, vol. 50, no. 5, May 2002. SONALKAR, RANJAN, et al., "An Efficient Bit-Loading Algorithm for DMT Application," IEEE Comm. Letters, vol. 4, pp. 80-82, March 2000. CAMPELLO, JORGE, "Optimal Discrete Bit Loading for Multicarrier Modulation Systems," IEEE International Symposium on Information Theory, August 1998, Cambridge, MA. CHOW, PETER S., et al., "A Practical Discrete Multitone Transceiver Loading Algorithm for Data Transmission over Spectrally Shaped Channels," IEEE Trans. on Communications, vol. 43, no. 2, 1995. FISCHER, ROBERT F.H., et al., "A New Loading Algorithm for Discrete Multitone Transmission," IEEE, 1996, pp. 724-728. LAMPE, LUTZ H.-J., et al., "Performance Evaluation of Non-Coherent Transmission over Power Lines," 8 pgs. HENKEL, WERNER, et al., "Maximizing the Channel Capacity of Multicarrier Transmission by Suitable Adaptation of the Time-Domain Equalizer," IEEE, Vol. 48, no. 12, December

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

2000.

Examiner

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¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Date Considered

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Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known						
Application Number	10/789,552					
Filing Date	February 26, 2004					
First Named Inventor:	Hossein Sedarat					
Art Unit	2631					
Examiner Name	Not Yet Assigned					
Attorney Docket Number	006491 P059					

Sheet	3	of	4	Attorney Docket Number	006491.P059	
		NO	N PATENT LITER	RATURE DOCUMENTS		
Examiner Initials*	Cite No ¹		azine, journal, serial	LETTERS), title of the article (, symposium, catalog, etc.), da er, city and/or country where p	te, page(s), volume-issue	T ²
	MSE Equalizers with 2756.					
	MELSA, PETER J.W., et al., "Impulse Response Shortening for Discrete Multitone Transceivers," IEEE Vol. 44, no. 12, December 1996, pp. 1662-1672.					
AL-DHAHIR, NAOFAL, et al., "Optimum Finite-Length Equalization for Multicarrier Transceivers," IEEE Vol. 44, No. 1, January 1996, pp. 56-64.						
	LEKE, ACHANKENG, et al., "A Maximum Rate Loading Algorithm for Discrete Multitone Modulation Systems," IEEE 1997, pp. 1514-1518.					
	BINGHAM, JOHN A.C., "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," IEEE, May 1990, pp. 5-14. ARSLAN, G., et al., "Equalization for Discrete Multitone Transceivers to Maximize Bit Rate IEEE, Vol. 49, No. 12, December 2001, pp. 3123-3135.					
				, et al., "Design Methods fo No. 3, March 2001, pp. 554		
	WYGLINSKI, ALEXANDER M., et al., "An Efficient Bit Allocation for Multicarrier Modulatio IEEE Wireless Communication, Networking Conference, Atlanta, GA, March 2004, 4 pgs.					
	"Draft Standard," Network and Customer Installation Interfaces- Asymmetric Digital Subscriber Line (ADSL) Metallic Interface, Draft American National Standard for Telecommunications, Alliance for Telecommunications Industry Solutions, T1.413-1998.					
		Algorithms for Multio 48, pp. 23-27, Jan. 2	carrier Communica 2000.	outationally Efficient Optimal ation Systems," IEEE Trans	on Communications, vol.	
	BARRETO, ANDRE NOLL, et al., "Adaptive Bit Loading for Wireless OFDM Systems," IE International Symposium on Personal, Indoor and Mobile Radio Communications, Octob 2001.					

Examiner	Date	· ······
Signature	Considered	

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¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Substitute for Form 1449/PTO Complete if Known **Application Number** 10/789,552 INFORMATION DISCLOSURE Filing Date February 26, 2004 STATEMENT BY APPLICANT First Named Inventor: Hossein Sedarat (use as many sheets as necessary) Art Unit 2631 **Examiner Name** Not Yet Assigned Attorney Docket Number 006491.P059 Sheet of NON PATENT LITERATURE DOCUMENTS T² Examiner Cite Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the Initials* No¹ item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published MILOSEVIC et al., "Simultaneous Multichannel Time Domain Equalizer Design Based on the Maximum Composite Shortening SNR". Dept. of Electrical and Computer Eng., The University of Texas, Austin Texas, Prior to filing date of current application, pp. 5 total. ANA GARCIA ARMADA et al., "Multi-User Constant-Energy Bit Loading for M-PSK-Modulated Orthogonal Frequency Division Multiplexing", © 2002 IEEE, pp. 526-530. MISAO FUKUDA et al., "A Line Terminating LSI Using Echo Cancelling Method for ISDN Subscriber Loop Transmission". IEEE Journal on Selected Areas in Communications, Vol. 6, No. 3, April 1988, pp. 476-483. CHENG-SHING WU et al., "A Novel Cost-Effective Multi-Path Adaptive Interpolated FIR (IFIR)-Based Echo Canceller", © 2000 IEEE, pp. V-453-V-456. Ranjan V. Sonalkar et al., "Shannon Capacity of Frequency-Overlapped Digital Subscriber Loop Channels", © 2002 IEEE, pp. 1741-1745. IVAN A. PEREZ-ALVAREZ et al., "A Differential Error Reference Adaptive Echo Canceller for Multilevel PAM Line Codes*" *Work supported by National Project T1C95-0026, © 1996, IEEE, pp. 1707-1710. NADEEM AHMED et al., "Optimal Transmit Spectra for Communication in the Presence of Crosstalk and Imperfect Echo Cancellation", Copyright 2001 IEEE, pp. 17-21.

Examiner	Date	
Signature	Considered	

^{*}Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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